

**FINDING OF NO SIGNIFICANT IMPACT  
AND DECISION RECORD  
EA-NM-510-06-72**

**DECISION:** It is my decision to authorize the Application For Permit To Drill Or Deepen (APD), for the Comanche Hill 18 Federal #1 gas well, submitted by Chesapeake Operating, Inc.. The provisions for the approval of the APD will include the attachment of the Roswell Field Office requirements as defined in the following exhibits; **Exhibit A** - Location Map, **Exhibit B** – Fence Construction, **Exhibit C** -Well Drilling Requirements, **Exhibit D** - Conditions of Approval, **Exhibit E** - Surface Restoration/Reclamation Requirements, and any special mitigating measures developed in the environmental assessment.

In the event the well proves to be a dry hole, or when the well is abandoned, I recommend that reclamation requirements be attached to the well abandonment, including additional requirements imperative for the complete reclamation of the disturbed areas. These actions are subject to 43 CFR 3160 regulations for Onshore Oil and Gas operations on federal lease NM-114964.

Authority for these actions is the Mineral Leasing Act of February 25, 1920, as amended.  
These actions will affect public land described as:

*New Mexico Principal Meridian*

**Section 18; Lot 2, T. 10 S., R. 26 E.  
1980' FNL & 710' FWL**

**FINDING OF NO SIGNIFICANT IMPACT:** Based on the analysis of potential environmental impacts contained in the attached environmental assessment, I have determined that impacts resulting from the proposed actions are not expected to be significant and an environmental impact statement is not required.

**RATIONALE FOR DECISION:** The proposed actions would not result in any undue or unnecessary environmental degradation. Portions of the subject land and adjacent land have been used for similar purposes and all present and potential uses and users have been considered.

**COMPLIANCE AND MONITORING:** The construction phase of the proposed actions and subsequent operational phases will be monitored as per regulations.

/s/Larry D. Bray

3/23/06

**Larry D. Bray, Assistant Field Manager,  
Lands and Minerals**

**Date**

# **ENVIRONMENTAL ASSESSMENT**

BLM SERIAL EA# NM-510-06-72

**WELL NAME & NO.: Comanche Hill 18 Federal #1**  
**BLM LEASE #: NM-114964**

Section 18, T. 10 S., R. 26 E., 1980' FNL & 710' FWL, Lot #2  
Chaves County, New Mexico, NMPM

**OPERATOR: Chesapeake Operating, Inc.**

**ACTION:** Application for Permit to Drill

**SURFACE/MINERAL ESTATE:** Federal Minerals/Surface

## **I. Introduction**

### **A. Need for the Proposed Action:**

Chesapeake Operating, Inc. proposes to drill and complete a natural gas well at the location described above. The proposed action is needed to develop the mineral lease.

### **B. Conformance with Land Use Plan:**

Oil and gas lease development is in conformance with the Roswell Approved Resource Management Plan and Record of Decision, October 1997.

### **C. Relationship to Statutes, Regulations, or other Plans:**

The proposed action does not conflict with any known State or local planning, ordinance or zoning.

## **II. Proposed Action and Alternatives**

### **A. Proposed Action:**

Chesapeake Operating, Inc. submitted Notice of Staking on 2/8/06, to drill the Comanche Hill 18 Federal #1 gas well. The Application for Permit to Drill was submitted on 2/27/06.

The proposed action would include:

1. No new road would be constructed to access this well. The Alamo County road that is approximately 7000 feet in length would provide access to the well and the entire road is on public lands. There is an existing road right-of-way, No. NM-110232, that is in place for the access.
2. The construction of the proposed well pad would be 300 feet long by 155 feet wide. The construction of the reserve pit would be about 100 feet by 150 feet and dug 4 feet below ground level. The reserve pit would be located on the east side of the well pad. Standard oilfield construction equipment consisting of; track-type tractors, motor graders, dump trucks, and water trucks would be used to construct the access road and well pad. A rotary drilling rig would be used

to drill the well to a depth of 4750 feet. Associated production facilities (e.g., pipeline, separator, storage tanks, etc.) would be installed during the production phase of this well. Topsoil would be stockpiled for future use over the disturbed areas.

**B. Alternatives:**

**1. Relocate the Proposed Action:**

The Alamo County road will provide the access and the well pad would be approved as proposed.

No other alternative location would have significantly fewer impacts than, or have a clear advantage over, the projected location. Therefore, the alternative of changing the location involved in this action is not analyzed further in this EA.

**2. No Action:**

Under this alternative, the application would be rejected. None of the environmental impacts associated with the proposed action or alternate location would occur. Additionally, economic benefits of the proposed action would not be realized, and the existing environment, including the developments in place, would remain unchanged.

**III. Description of the Affected Environment**

**A. General Setting:**

The proposed well pad is located on federal minerals and surface about 13.2 miles East of Roswell, N.M. Historical and present use of the land has been limited to livestock grazing and energy development.

**B. Rights of Record:**

An inspection of the Master Title Plats and other Bureau records revealed the following title information pertaining to valid existing prior rights on the subject land:

- Oil and gas leases: NM-114964 - covers lease actions.
- No federally administered rights-of-way would be affected in the project area.
- No mining claims are recorded within Sec. 18, T. 10 S., R. 26 E., NMPM.

**C. Affected Resources:**

The following critical resources have been evaluated and are either not present or are not affected by the proposed action or the alternatives in this EA:

Areas of Critical Environmental Concern (ACEC's)  
Cultural Resources (06-R-042-A)  
Farmlands, Prime/Unique  
Floodplains  
Native American Religious Concerns  
Wastes, Hazardous/Solid  
Wetlands and Riparian Zones

Wild & Scenic Rivers  
Wilderness

1. Air Quality:

The area of the proposed action is considered a Class II air quality area. A Class II area allows moderate amounts air quality degradation. The primary sources of air pollution are dust from blowing wind on disturbed or exposed soils and exhaust emissions from motorized equipment.

2. Soil:

The *Soil Survey of Chaves County, New Mexico, Northern Part (USDA Soil Conservation Service 1980)* was used to describe and analyze impacts to soils from the proposed action. The soil map units represented in the project area are:

Hollomex-Reeves-Milner, dry loams, 0 to 3 percent slopes (HMA) Permeability of the Hollomex soil is moderate. Runoff of the Hollomex soil is medium and the hazard of water erosion is moderate and the hazard of soil blowing is high. Permeability of the Simona soil moderate. Runoff of the Simona soil is medium and the hazard of water erosion is medium and soil blowing is high.

3. Vegetation: GRASSLAND COMMUNITY

This lease is within the grassland vegetative community as identified in the Roswell Resource Management Plan/Environmental Impact Statement (RMP/EIS). Appendix 11 of the Draft RMP/EIS describes the Desired Plant Community (DPC) concept and identifies the components of each community. The distinguishing feature for the grassland community is that grass species typically comprises 75% or more of the potential plant community. Short-grass, mid-grass, and tall-grass species such as black grama (*Bouteloua eriopoda*), tobosa (*Pleuraphis mutica*), gyp grama (*Bouteloua breviseta*), gyp muhly (*Muhlenbergia* spp.), burrograss (*Scleropogon brevifolius*), and dropseed (*Sporobolus* spp.) may be found within this community. The community also includes shrub, half-shrub, and forb species such as ephedra (*Ephedra* spp.), four-wing saltbush (*Atriplex canescens*), yucca (*Yucca* spp.), coldenia (*Coldenia* spp.), Christmas cholla (*Opuntia imbricata*), prickly pear (*Opuntia engelmannia*) and globemallow (*Sphaeralcea* spp.). The percentages of grasses, forbs, and shrubs actually found at a particular location will vary with recent weather factors and past resource uses. The proposed location has gyp inclusions with corresponding vegetation and biological crusts.

The Ecological Site Description for the proposed well pad and access road is [SD-3 Loamy (Southern Desertic Basins, Plains & Mountains)].

4. Invasive & Noxious Weeds:

Known populations of the noxious weed species, African Rue (*Peganum harmala*) can be found within this allotment, but not on the proposed access road and well pad. However potential exists for this plant to spread and establish along roadways and disturbed areas.

Infestations of noxious weeds can have a disastrous impact on biodiversity and natural ecosystems. Noxious weeds affect native plant species by out-competing native vegetation for light, water and soil nutrients. Noxious weeds cause estimated losses to producers \$2 to \$3 billion annually. These losses are attributed to: (1) Decreased quality of agricultural products due to high levels of competition from

noxious weeds; (2) decreased quantity of agricultural products due to noxious weed infestations; and (3) costs to control and/or prevent the noxious weeds.

Further, noxious weeds can negatively affect livestock and dairy producers by making forage either unpalatable or toxic to livestock, thus decreasing livestock productivity and potentially increasing producers' feed and animal health care costs. Increased costs to operators are eventually borne by consumers.

Noxious weeds also affect recreational uses, and reduce realty values of both the directly influenced and adjacent properties.

Recent federal legislation has been enacted requiring state and county agencies to implement noxious weed control programs. Monies would be made available for these activities from the federal government, generated from the federal tax base. Therefore, all citizens and taxpayers of the United States are directly affected when noxious weed control prevention is not exercised.

5. Ground Water Quality :

Useable water for irrigation and stock use is obtained from the Quaternary Alluvium and the Artesia Group. NMOCD recommends setting surface casing between 600 ft. and 800 ft. At this location the Base of the Artesia Group should be about 840 ft..

6. Wildlife:

Wildlife species utilizing this area for habitat include mule deer, pronghorn, coyote, fox, rabbits, kangaroo rats, pocket gophers, herptile species, as well as a variety of songbirds, dove, quail, and raptors.

There are no known threatened or endangered species of plant or animals within the project area. The list of federal threatened, endangered and candidate species reviewed for this EA can be found in Appendix 11 of the Roswell Approved RMP (AP11-2).

7. Range: The access road and well pad are located on a BLM grazing allotment #65037, permitted to Jack Hagelstein Jr., P.O. Box 297, Dexter, New Mexico 88230

8. Visual Resources:

The proposed action is located within a designated VRM Class IV area. The setting presents a winter gray setting and in warm months, with foliage, a gray to gray-green color pattern.

9. Recreation:

The area around the proposed action is primarily used by recreational visitors engaged in hunting, caving sight seeing, driving for pleasure, off-highway vehicle use and other recreational activities. Non-recreation visitors include oil and gas industrial workers and ranchers.

10. Cave/Karst:

While the proposed action is located in *High Potential Karst Area*, no surface cave/karst features were observed in the immediate vicinity of proposed actions.

11. Environmental Justice-Minority or Low-income Populations or Communities:

The proposed actions would not affect minority or low-income populations or communities.

**IV. ENVIRONMENTAL IMPACTS**

A. Proposed Action Impacts:

The surface disturbance involved in construction of the well pad and reserve pit would total about 1.4 acres of federal minerals/surface.

1. Air Quality:

Air quality would temporary be impacted with pollution from exhaust emissions, chemical odors, and dust that would be caused by the motorized equipment used to construct the well pad and by the drilling rig that will be used to drill the well. Dust dissemination would discontinue upon completion of the construction phase of the well pad and reserve pit. Air pollution from the motorized equipment would discontinue at the completion of the drilling phase of the operations. The winds that frequent the southeastern part of New Mexico generally disperse the odors and emissions. The impacts to air quality would be greatly reduced as the construction and drilling phases are completed.

2. Soil:

The construction of the well pad would physically disturb about 1.4 acres of topsoil and would expose the substratum soil. The exposed soil would be susceptible to wind blowing and water erosion. Surfacing the exposed soils on the well pad would minimize these impacts. Construction of the reserve pit 4 feet below ground level would impact deeper soil horizons on the well pad. The impact to the soil would be remedied upon reclamation of the well pad when the stockpiled soil that was specifically conserved to establish a seed bed is spread over the well pad and vegetation re-establishes.

Additional soil impacts associated with lease development would occur when heavy precipitation causes water erosion damage. When water saturated segment(s) on the county road become impassable, vehicles may still be driven over the road. Consequently, deep tire ruts would develop. Where impassable segments are created from deep rutting, unauthorized drive-arounds may occur outside the designated travelway of the county road. Road maintenance would alleviate potential impacts to the county road from water erosion damage. Parking the vehicles off road along the side the county road would also create drive arounds. Putting up a three strand fence along side the west side of the Alamo County road would alleviate this problem.

3. Vegetation:

The construction of the well pad would remove about 1.4 acres of native vegetation. If it is a producing well, reclamation would not commence until the well is a depleted producer and plugged and abandoned. Vegetation recovery on the well pad would depend on the life of the well. Native vegetation would encroach on well pad over time with only high traffic areas remaining unvegetated. If drilled as a dry hole and plugged, reclamation of the well pad would immediately follow. Vegetation impacts would be short-term when the well pad re-vegetate within a few years, and reclamation of the well pad is successful.

4. Invasive & Noxious Weeds:

The construction of the well pad may unintentionally contribute to the establishment and spread of noxious weeds. Noxious weed seeds could be carried onto the project areas by construction equipment, the drilling rig and transport vehicles. The main mechanism for seed dispersion on the well pad is by equipment and vehicles that were previously used and or driven across or through noxious weed infested areas. The potential for the dissemination of invasive and noxious weed seeds may be elevated by the use of construction equipment typically contracted out to companies that may be from other geographic areas in the region. Washing and decontaminating the equipment prior to transporting the equipment onto the construction areas would minimize this impact.

Impacts by noxious weeds will be minimized due to requirements for the company to eradicate the weeds upon discovery. Multiple applications may be required to effectively control the identified populations.

#### 5. Ground Water Quality:

The use of a plastic-lined reserve pit would reduce or eliminate seepage of drilling fluid into the soil and eventually reaching groundwater. Spills or produced fluids (e.g., saltwater, oil, and/or condensate in the event of a breach, overflow, or spill from storage tanks) could result in contamination of the soils onsite, or offsite, and may potentially impact groundwater resources in the long term. The casing and cementing requirements imposed on the proposed well would reduce or eliminate the potential for groundwater contamination from drilling muds and other surface sources.

#### 6. Wildlife:

Some small wildlife species may be killed and their dens or nests destroyed during construction of the well pad. The construction of the well pad could cause fragmentation of wildlife habitat. The short-term negative impact to wildlife would occur during the construction phase of the operation due to noise and habitat destruction. In general, most wildlife species would become habituated to the new facilities. For other wildlife species with a low tolerance to activities, the operations on the well pad would continue to displace wildlife from the area due to ongoing disturbances such as vehicle traffic and equipment maintenance. The conditions of approval would alleviate most losses of wildlife species, such as; fencing the reserve pits, netting storage tanks, installation or other modifications of cones on separator stacks, and timing stipulations. Upon abandonment of the well, the area would revegetate and wildlife would return to previous levels.

#### 7. Range:

There would be some minor disruption of livestock grazing in the pasture, specifically on the well pad, during the construction and drilling phase of the well. Vehicle traffic would increase in the area, which may lead to conflicts with livestock. The allottee suggested that a three strand fence enclosure should be constructed around the well pad to prevent livestock from entering the pad areas. The construction of the fence enclosure would alleviate potential livestock conflicts on the well.

#### 8. Visual Resources:

Because of the very large arroyo leading up the proposed Oil and Gas location vehicles and visitors would be able to see facilities over eight feet in height from U.S. Highway 380 and other surrounding areas. Low profile tanks under eight feet in would be required at this location. In addition all facilities would be less than eight feet high in this location.

Facilities, such as condensate and produced water or oil storage tanks that rise above eight feet, would provide a geometrically strong vertical and horizontal visual contrast in form and line to the characteristic landscape and vegetation, which have flat, horizontal to slightly rolling form and line. The proposed action is located in an area designated VRM Class IV.

In addition to the low profile tanks color manipulation, by painting well facilities to blend with the rolling to flat vegetative and/or landform setting with a gray-green to brownish color, the view is expected to favorably blend with the form, line, color and texture of the existing landscape. The flat olive drab from the supplemental environmental colors also closely approximates the greenish brown color of the setting. All facilities, including the meter building, would be painted this color.

Cumulative adverse visual impacts can be avoided by gradually moving into a more appropriate vegetative/landform setting color scheme.

9. Recreation

Oil and gas activities would have little or no affect on recreational opportunities within this area. Large blocks of public land would allow recreationist to use public land and avoid the oil and gas facilities within the area.

10. Cave/Karst:

While the proposed action is located in the *High Potential Karst Area*, no surface cave/karst features were observed in the immediate vicinity of the proposed actions.

11. Environmental Justice-Minority or Low-income Populations or Communities:

The proposed actions would not impact the minority or low-income populations or communities.

B. Alternatives:

1. Relocation Alternative:

The alternative of changing the location involved in this action was not analyzed further because no other alternative location would have significantly fewer impacts than, or has a clear advantage over, the proposed location.

2. No Action Alternative:

The no action alternative would constitute denial of the application. This alternative would have no consequential results from the identified environmental impacts. There would, however, be an adverse economic impact to the applicant through the denial of the lessee's right to develop the mineral reserves or through increased costs of accessing those mineral reserves through other means. There have been no significant or unmitigatable impacts identified as a result of this analysis, which would warrant selection of the no action alternative.

C. Mitigation:

The Roswell Field Office; Well Location Map (Exhibit A), Fence Construction (Exhibit B), Well Drilling Requirements (Exhibit C), Conditions of Approval (Exhibit D), Surface



Restoration/Reclamation Requirements (Exhibit E), and the special requirements derived from this EA, would be applied to this proposed action to minimize the surface disturbance and conserve the surrounding landscape.

Only Low Profile facilities under eight feet in height will be allowed on this location. In addition the color of all facilities will be painted a flat Olive Green 18-0622 in accordance with the Supplemental Environmental Color chart designated by the BLM Washington Office Fluid Minerals Group.

D. Cumulative Impacts:

While it is likely that there will be no significant cumulative impact from the proposed action, continued oil and gas development, and other surface-disturbing activities in this area, may potentially have negative cumulative impacts on vegetation, soil, water, livestock, wildlife and visual resources.

**V. Consultation and Coordination**

An onsite inspection was conducted on the well pad on 2/21/06. In attendance was Mr. Mike Whitefield, Chesapeake Field Representative, Isaac Coss, Sweat Construction, Jack Hagelstein, BLM Allottee, and Richard Hill, Environmental Protection Specialist, BLM Roswell Field Office. Coordination and consultation has occurred with the applicant's agent. The comments and suggestions expressed during the onsite consultation have been incorporated into this EA.

Coordination and consultation has occurred with Roswell Field Office's Staff. The comments and suggestions expressed during the analytical review of the proposed action have been incorporated into this Environmental Assessment.

Reviewed by:

\_\_\_\_\_  
Irene Gonzales, Realty Specialist

\_\_\_\_\_  
Date

# EXHIBIT C

## WELL DRILLING REQUIREMENTS

1 of 6 pages

OPERATORS NAME: Chesapeake Operating, Inc. LEASE NO.: NM-114964  
WELL NAME & NO: Comanche Hill 18 Federal #1  
QUARTER/QUARTER & FOOTAGE: Lot 2 - 1980' FNL & 710' FWL  
LOCATION: Section 18, T. 10 S., R. 26 E., NMPM  
COUNTY: Chaves County, New Mexico

### **I. GENERAL PROVISIONS:**

- A. The operator has the right of administrative review of these requirements pursuant to 43 CFR 3165.1(a).
- B. The operator shall hereafter be identified as the holder in these requirements. The Authorized Officer is the person who approves the Well Drilling Requirements.

### **II. WELL PAD CONSTRUCTION REQUIREMENTS:**

- A. The BLM shall administer compliance and monitor construction of the well pad. Notify **Richard G. Hill** at least **3** working days (72 Hours) prior to commencing construction of the well pad. Call the Roswell Field Office number **(505) 627-0247**.
- B. Prior to commencing construction of the well pad, or other associated developments, the holder shall provide the dirt contractor with **a copy of the approved APD signature page, a copy of the location map (EXHIBIT A), Fence Construction (Exhibit B), and a copy of pages 1 & 2 from the Well Drilling Requirements (EXHIBIT C).**
- C. The holder shall stockpile the topsoil from the surface of the well pad. The topsoil on the **Comanche Hill 18 Federal #1** well pad is approximate **6** inches in depth. Approximately **800** cubic yards of topsoil shall be stockpiled on the **Northwest** corner of the well pad, opposite the reserve pit.
- D. **The well pad shall be fenced off with a three strand wire fence that shall be constructed around the entire well pad (See Exhibit B). H-Braces shall be constructed at each corner of the fence. The wire fence enclosure shall be constructed around the well pad prior to commencement of drilling operations.**

#### **C. Reserve Pit Requirements:**

1. The reserve pit shall be constructed 150' X 100' on the **East** side of the well pad.
2. The reserve pit shall be constructed to a minimum depth of four (4) feet below ground level. The reserve pit shall be constructed, so that the cuttings in the reserve pit can be buried a minimum depth of three (3) feet below ground level. **See Exhibit E – Surface Reclamation/Restoration Requirements.**
3. A synthetic or fabricated liner **12** mil in thickness shall be used to line the reserve pit. The liner shall meet ASTM standards that are designed to be resistant to the reserve pit contents.

4. The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.
5. The reserve pit shall be constructed so as not to leak, break, or allow discharge of drilling muds. Under no circumstances will the reserve pit be cut to drain drilling muds on the well location.
6. The reserve pit shall not be located in any natural drainage.
7. The reserve pit shall be equipped to deter entry by birds, bats, other wildlife, and livestock, if the reserve pit contains any oil and/or toxic fluids.
8. Drilling muds shall be properly disposed of before the reserve pit is reclaimed. Drilling muds can be allowed to evaporate in the reserve pit or be removed and transported to an authorized disposal site. The reserve pit shall be backfilled when dry.
9. Dumping of junk or trash into the reserve pit is not allowed. Junk or trash shall be removed from within the reserve pit before the reserve pit is reclaimed. **Junk or trash shall not be buried in the reserve pit.**

**E. Federal Mineral Materials Pit Requirements:**

1. Caliche, gravel, or other related materials from new or existing pits on Federal mineral estate shall not be taken without prior approval from the authorized officer. Contact Jerry Dutchover at (505) 627 -0236.
2. Payment for any Federal mineral materials that will be used to surface the well pad is required prior to removal of the mineral materials.
3. Mineral Materials extracted during construction of the reserve pit may be used for development of the pad as needed, for the Comanche Hill 18 Federal #1 gas well only. Removal of any additional material on location must be purchased from BLM prior to removal of any material.
  - a. An optional mineral material pit may be constructed within the archaeologically cleared area. The mineral material removed in the process can be used for surfacing the pad. However, a mineral material sales contract must be purchased from the BLM prior to removal of any material.

**F. Well Pad Surfacing Requirement:**

The well pad shall be surfaced with 6 inches of compacted caliche, gravel, or other approved surfacing material. The well pad shall be surfaced prior to drilling operations.

**G. Cave Requirements:**

1. If, during any construction activities any sinkholes or cave openings are discovered, all construction activities shall immediately cease. Contact Larry Bray at (505) 627-0250.
2. The BLM Authorized Officer will, within 24 hours of notification in "A" above, conduct an on-the-ground field inspection for karst. At the field inspection the authorized field inspector will authorize or suggest mitigating measures to lessen the damage to the karst environment. A verbal order to proceed or stop the operation will be issued at that time.

### **III. DRILLING OPERATION REQUIREMENTS:**

#### **A. GENERAL DRILLING REQUIREMENTS:**

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County in sufficient time for a representative to witness:

A. Well spud                      B. Cementing casing 8-5/8 inch 4-1/2 inch                      C. BOP tests

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing ( size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15-day time frame.

4. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

#### **B. CASING:**

1. The 8-5/8 inch surface casing shall be set at approximately 865 feet and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. The minimum required fill of cement behind the 4-1/2 inch production casing is to reach at least 500 feet above the top of the uppermost hydrocarbon productive interval. .

#### **C. PRESSURE CONTROL:**

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 8-5/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.

#### **IV. ON LEASE - WELL REQUIREMENTS:**

A. The holder shall post signs identifying the location permitted herein with the requirements contained in Onshore Oil and Gas Order #1 and 43 CFR 3162.6.

B. The following data is required on the well sign that shall be posted in a conspicuous place on the well pad. The sign shall be kept up with current identification and shall be legible for as long as the well is in existence:

Operator Name: Chesapeake Operating, Inc.  
Well Name & No.: Comanche Hill 18 Federal #1  
Lease No.: NM-114964  
Footage: 1980' FNL & 710' FWL  
Location: Section 18, T. 10 S., R. 26 E.

C. UPON ABANDONMENT OF THE WELL, THE SAME INFORMATION SHALL BE INSCRIBED ON THE DRY HOLE MARKER WITH A BEADED WELD.

D. The approval of the APD does not in any way imply or grant approval of any on-lease, off-lease, or off-unit action(s). It is the responsibility of the holder to obtain other approval(s) such as rights-of-way from the Roswell Field Office or other agencies, including private surface landowner(s).

**E. All crew vehicles, including caterpillar track-type tractors, motor graders, off-highway trucks and any other type of motorized equipment that is used in the construction of the well pad shall be confined to the area(s) herein approved. The drilling rig that is used to drill the well shall also be confined to the approved area(s).**

#### **F. Containment Structure Requirement:**

1. A containment structure or earthen dike shall be constructed and maintained around all storage facilities/batteries. The containment structure or earthen dike shall surround the storage facilities/batteries.
2. The containment structure or earthen dike shall be constructed two (2) feet high around the facilities/batteries (the containment structure or earthen dike can be constructed higher than the two (2) feet high minimum).
3. The perimeter of the containment structure or earthen dike can be constructed substantial larger for greater holding capacity of the contents of the largest tank.
4. The containment structure or earthen dike shall be constructed so that in case of a spill the structure can contain the entire contents of the largest tank, plus 24 hour production, within the containment structure or earthen dike, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

**G. Tank Batteries and Facility Height Requirements:**

Only Low Profile facilities, under eight feet in height shall be constructed on this location. If necessary, multiple tanks shall be used.

**H. Painting Requirement:**

All above-ground structures (e.g.: meter houses, tanks, above ground pipelines, and related appurtenance, etc.) not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for painting all the well facilities is Olive Drab, Supplemental Environmental Colors 18-0622 TPX.

**I. Fence Requirement:**

The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. On private surface the holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

**J. Open-vent Exhaust Stack Requirements:**

1. All open-vent exhaust stacks associated with heater-treater, separators and dehydrator units shall be modified to prevent birds and bats from entering them and to the extent practical to discourage perching and nesting.
2. New production equipment installed on federal leases after November 1<sup>st</sup>, 1993, shall have the open-vent exhaust stacks constructed to prevent the entry of birds and bats and to the extent practical, to discourage perching, and nesting.

**V. Invasive and Noxious Weeds Requirement:**

A. The holder shall be held responsible if noxious weeds become established within the area. Evaluation of the growth of noxious weeds shall be made upon discovery. Weed control will be required on the disturbed land where noxious weeds exist, which includes the pad, associated pipelines, and adjacent land affected by the establishment of weeds due to this action. The holder is responsible for consultation with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policy.

## **WELL DRILLING REQUIREMENTS**

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B. The holder shall insure that the equipment and or vehicles that will be used to construct, maintain and administer the well pad and resulting well are not polluted with invasive and noxious weed seed. Transporting of invasive and noxious weed seed could occur if the equipment and vehicles were previously used in noxious weed infested areas. In order to prevent the spread of noxious weeds, the Authorized Officer shall require that the equipment and vehicles be cleaned with either high pressure water or air prior to construction, maintenance and administration of the well pad and resulting well.

### **VI. SPECIAL REQUIREMENT(S):**

#### **A. Fence Construction Along The West Side Alamo County Road:**

**No off road parking is allowed. An open ended wire fence shall be constructed along the west side of the Alamo County road opposite the well pad (see Exhibit B). A three strand wire fence shall be constructed 300 feet long and intermittent iron fence post shall be installed approximately 10 feet apart along the west side of the Alamo County road. The fence shall be constructed in such a way as to prevent any vehicular parking off the road and/or onto the pastures. The opened ended three strand wire fence shall be in existence for as long as the well is a producer.**

# EXHIBIT D

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## CONDITIONS OF APPROVAL

OPERATOR: Chesapeake Operating, Inc.  
LEASE NO: NM-114964  
WELL NAME & NO.: Comanche Hill 18 Federal #1  
LOCATION: Section 18, T. 10 S., R. 26 E., N.M.P.M.  
QUARTER/QUARTER & FOOTAGE: Lot 2 - 1980' FNL & 710' FWL  
COUNTY: Chaves County, New Mexico

### GENERAL CONDITIONS OF APPROVAL:

1. The **operator** shall hereafter be identified as the **holder** in these requirements. The Authorized Officer is the person who approves the Conditions Of Approval.
2. The holder shall indemnify the United States against any liability for damage to life or property arising from occupancy or use of public lands under this authorization.
3. The holder shall have surface use approval prior to any construction work on change(s) or modification(s) to the well pad. The holder shall submit (Form 3160-5), Sundry Notice and Report On Wells, an original plus one (1) copy to the Roswell Field Office, stating the basis for any changes to previously approved plans. Prior to any revised construction the holder shall have an approved Sundry Notice and Report On Wells or written authorization to proceed with the change in plans ratified by the Authorized Officer.
4. **Weed Control:**
  - A. The holder shall be held responsible if noxious weeds become established within the area. Evaluation of the growth of noxious weeds shall be made upon discovery. Weed control will be required on the disturbed land where noxious weeds exist, which includes the pad, associated pipelines, and adjacent land affected by the establishment of weeds due to this action. The holder is responsible for consultation with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policy.

CONDITIONS OF APPROVAL

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B. The holder shall insure that the equipment and or vehicles that will be used to construct, maintain and administer the well pad and resulting well are not polluted with invasive and noxious weed seed. Transporting of invasive and noxious weed seed could occur if the equipment and vehicles were previously used in noxious weed infested areas. In order to prevent the spread of noxious weeds, the Authorized Officer shall require that the equipment and vehicles be cleaned with either high pressure water or air prior to construction, maintenance and administration of the well pad and resulting well.

## **5. Hazardous Substances:**

a. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act Of 1976, as amended (15 U.S.C. 2601, *et. seg.*) with regard to any toxic substances that are used, generated by or stored on the project/pipeline route or on facilities authorized. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

b. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substances or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seg.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seg.*) on this project/pipeline (unless the release or threatened release is wholly unrelated to the holder's activity on the pipeline). This agreement applies without regard to whether a release is caused by the operator, its agent, or unrelated third parties.

## **6. Undesirable Events:**

If, during any phase of the construction, operation, maintenance, or termination of the authorization, any oil or other pollutants, should be discharged, and impacting Federal land, the control and total removal, disposal, and cleaning up of such oil or other pollutants, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal land, or to repair all damages to Federal land resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

**7. Archaeological, Paleontology, and Historical Sites:**

a. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder shall be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

b. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of the project work, the holder shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The holder or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes. Any unauthorized collection or disturbance of cultural resources may result in a shutdown order by the Authorized Officer.

**8. Sanitation:**

The holder shall be responsible for maintaining the site in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

**9. Open-top Tanks:** Any open-top tank containing oil and/or toxic fluids shall be covered with netting or equipped to prevent birds, bats, and other wildlife from entering the open-top tank.

**10. Other:** None

# EXHIBIT E

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## SURFACE RECLAMATION/RESTORATION REQUIREMENTS

OPERATORS NAME: Chesapeake Operating, Inc. LEASE NO.: NM-114964  
WELL NAME & NO: Comanche Hill 18 Federal #1  
QUARTER/QUARTER & FOOTAGE: Lot 2 - 1980' FNL & 710' FWL  
LOCATION: Section 18, T. 10 S., R. 26 E., NMPM  
COUNTY: Chaves County, New Mexico

### **I. GENERAL PROVISIONS:**

- A. The operator has the right of administrative review of these requirements pursuant to 43 CFR 3165.1(a).
- B. The operator shall hereafter be identified as the holder in these requirements. The Authorized Officer is the person who administers the reclamation requirements.
- C. The holder shall comply with all the surface reclamation/restoration required by the Authorized Officer pertaining to the reclamation/restoration of the well pad.

### **II. FORM 3160-5, SUNDRY NOTICES AND REPORTS ON WELLS:**

- A. The holder shall adhere to the following:
  - 1. If the well is not drilled, please notify the BLM so that an official release can be approved.
  - 2. **Downhole requirement:** If the well is a dry hole and will be plugged, approval of the proposed plugging program may be obtained orally. However, oral approval must be confirmed in writing by immediately filing a Sundry Notice And Report On Wells (Form 3160-5) "**Notice of Intention to Abandon**", an original and five (5) copies shall be submitted to the Roswell Field Office. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where plugs are to be placed, type of plug, type of plugging mud, etc..
  - 3. The same notification shall be required of the Holder for the reclamation/restoration of the well pad. The Holder shall initially report surface reclamation/restoration of the well pad concurrently with the Downhole requirement. A Sundry Notice And Report On Wells (Form 3160-5) "**Notice of Intention to Abandon**", an original and five (5) copies shall be submitted to the Roswell Field Office. Upon receipt of the "**NOI**" the Authorized Officer shall provide the holder with the specific requirements for the reclamation/restoration of the well pad.

**SURFACE RECLAMATION/RESTORATION REQUIREMENTS**

**2 of 5 pages**

- 4. **Subsequent Report Of Abandonment:** The holder shall submit a second report on Form 3160-5, Sundry Notices and Reports On Wells, an original and five (5) copies shall be submitted to the Roswell Field Office, pertaining to the reclamation/restoration of the well pad. The holder shall

demonstrate that the surface reclamation/restoration requirements have been complied with. The holder shall specify that the reclamation work accomplished the restoration of the disturbed areas to as near the original surface condition the land was in prior to construction of the well pad.

5. **Final Abandonment Notice:** The holder shall submit a third report on Form 3160-5, Sundry Notices and Reports On Wells, an original and five (5) copies shall be submitted to the Roswell Field Office, that shall ascertain that all surface reclamation/restoration requirements have finally been completed and that the well pad is ready for final inspection. The holder shall specify that the surface has been reclaimed in accordance with federal regulations and request for the final approval of the well pad.

### **III. BOND LIABILITY:**

A. Liability under bond shall be retained until all surface reclamation/restoration of the well pad has been completely reclaimed to the satisfaction of the Authorized Officer.

### **IV. WELL PAD RECLAMATION REQUIREMENTS:**

1. If the well is completed, all areas of the well pad not necessary for operations shall be reclaimed to resemble the original contours of the surrounding terrain.

2. Upon abandonment of the well, cut-and-fill slopes shall be re-contoured and reduced to a slope of 3:1 or less. The road shall be recontoured to as near the original topography, as possible.

3. Upon abandonment of the well, all production equipment shall be removed from the well pad and properly disposed of.

4. **Upon abandonment of the well, the surface material (caliche/gravel) shall be removed from the well pad.** The removal of surface material shall be done with the minimal amount of mixing of the caliche or gravel material with the in place subsurface soil. The Authorized Officer shall be notified by the Holder for the proper disposal of the surfacing material from the well pad.

5. Upon removal of the surfacing material, the well pad shall be ripped a maximum of **16** inches deep (Ripping depth will be determined by depth of soil shown in the Soil Conservation Service Survey Handbook).

6. All structures (e.g.: open ended fences, H-Braces, signs, etc.) shall be removed and properly disposed of.

7. All over-burden material shall be replaced in the cut areas, and any other excavated earthwork shall be back filled.

8. An two (2) foot high earthen berm shall be constructed in front of the well pad to prevent vehicular traffic on the reclaimed well pad.

### **SURFACE RECLAMATION/RESTORATION REQUIREMENTS**

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### **V. Reserve Pit Reclamation Requirements:**

- A. Upon reclamation of the reserve pit, the impervious, reinforced, synthetic or fabricated 12 mil in thickness liner shall be used to encapsulate the reserve pit cuttings.
- B. The dried cuttings in the reserve pit shall be buried a minimum depth of three (3) feet below ground level.
- C. The reserve pit area shall be covered with a three (3) feet minimum cap of clean soil or like material that is capable of supporting native plant growth. Once the reserve pit contents have been capped, the cap shall not be disturbed without NMOCD approval.
- D. Should the cuttings in the reserve pit not meet the three (3) feet below ground level depth, the excess contents shall be removed from the reserve pit until the required minimum depth of three (3) feet below ground level requirement has been met. The excess cuttings shall be removed from the well location and shall be properly disposed of at an authorized disposal site.
- E. Contact Randy Legler at (505) 627-0215, three days before commencing the reserve pit reclamation.

## **VI. SEEDING REQUIREMENTS:**

- A. The stockpile of topsoil shall be spread over the well pad to cultivate a seedbed. The holder shall not contaminate the topsoil stockpile with the reserve pit muds and/or cuttings.
- B. The reclaimed area(s) shall be seeded with the seed mixture that was determined by the Roswell Field Office for the Desired Plant Community on this well site.
- C. The same seed mixture shall be used for the reclamation of the well pad.
- D. The planting of the seed shall be done in accordance with the following seeding requirements:
  - 1. The topsoil soil shall be plowed under with soil turning equipment and the plowed surface shall be disked before seeding. Seed shall be planted using a drill equipped planter with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area. Smaller/heavier seed has a tendency to drop to the bottom of the drill and is planted first; the holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre noted below are to be doubled.
  - 2. The holder shall seed all the disturbed areas with the DPC seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed per acre, (Pounds of pure live seed per acre: pounds of seed X percent purity X percent germination = pounds pure live seed). There shall be no primary or secondary noxious weeds in the seed mixture.

## **SURFACE RECLAMATION/RESTORATION REQUIREMENTS**

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In accordance with State law(s) the seed should be tested for purity and viability within nine (9) months prior to sell. Commercial seed shall be either certified or registered seed. The seed mixture

container shall be tagged in accordance with State law(s) and the certified seed tag shall be made available for inspection by the Authorized Officer.

3. **Desired Plant Community** seed mixture to be planted in pounds of pure live seed per acre:

Alama silt loam, dry, 0-3% Slope; Hollomex loam, 1-9% slope, dry; Reeves loam, 0-2% slope, dry; Milner loam, 0-2% slope, dry

Loamy, SD-3 Ecological Site: Loamy CP-2; Gyp Upland CP-2

<u>Common Name and Preferred Variety</u>	<u>Scientific Name</u>	<u>Pounds of Pure Live Seed Per Acre</u>
Blue grama, var. Lovington	( <i>Bouteloua gracilis</i> )	4.00 lbs.
Sideoats grama, var. Vaughn or El Reno	( <i>Bouteloua curtipendula</i> )	1.0 lb.
Sand dropseed	( <i>Sporobolus cryptandrus</i> )	0.50 lb.
Vine mesquite	( <i>Panicum obtusum</i> )	1.00 lb.
Plains bristlegrass	( <i>Setaria macrostachya</i> )	1.00 lb.
Indian blanketflower	( <i>Gaillardia aristata</i> )	0.50 lb.
Desert or Scarlet Globemallow	( <i>Sphaeralcea ambigua</i> ) or ( <i>S. coccinea</i> )	<u>1.00 lb.</u>
TOTAL POUNDS PURE LIVE SEED PER ACRE		9.00 lbs.

4. If one species is not available, increase ALL others proportionately. The seed mixture shall be certified weed free seed. A minimum of 4 species is required, including 1 forb species.

E. The recommended time to seed is from June 15<sup>th</sup> through September 15<sup>th</sup>. The optimum seeding time is in mid-July. Successive seeding should be done either late in the fall (Sept. 15<sup>th</sup> - Nov. 15<sup>th</sup>, before freeze up) or early as possible the following spring to take advantage of available ground moisture. However, the holder may seed immediately after completing surface abandonment requirements.

F. The seeding of the disturbed areas shall be repeated until a vegetative thicket is established on the well pad. The Authorized Officer shall make the determination when the regrowth on the disturbed areas is satisfactory.

G. The holder shall be responsible for the establishment of vegetation on the well pad. Evaluation of vegetative growth will not be made before the completion of the first growing season after seeding. The Authorized Officer reserves the right to require reseeding at a specific time if seed does not germinate after one growing season. Waiver of this requirement would be considered if diligent attempts to revegetate the disturbed areas have failed and the Authorized Officer determines that any further attempt to replant the well pad is futile.

H. Contact Mr. Randy Legler at (505) 627-0215 to witness the seeding operations, two (2) days prior to seeding the disturbed areas.

**SURFACE RECLAMATION/RESTORATION REQUIREMENTS**

**5 of 5 pages**

I. Invasive and Noxious Weeds Requirement:

1. The holder shall be held responsible if noxious weeds become established within the reclaimed areas. Evaluation of the growth of noxious weeds shall be made upon discovery. Weed control will be required on the disturbed land where noxious weeds exist, which includes the pad, associated pipeline corridor/routes, and adjacent land affected by the establishment of weeds due to this action. The holder is responsible for consultation with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policy.

2. The holder shall insure that the equipment and or vehicles that will be used to reclaim the well pad are not polluted with invasive and noxious weed seed. Transporting of invasive and noxious weed seed could occur if the equipment and vehicles were previously used in noxious weed infested areas. In order to prevent the spread of noxious weeds, the Authorized Officer shall require that the equipment and vehicles be cleaned with either high pressure water or air prior to reclamation of the well pad.